

Remarks

Claims 1-11 are pending in the application. By this amendment, claims 1, 2, 7, and 8 are amended to change the term “load equivalent weight” back to its original form of “load equivalent.”

It is respectfully submitted that no new matter is added by this amendment. Any amendments to the claims which have been made in this amendment, and which have not been specifically noted to overcome a rejection based on prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to be attached thereto.

Prior to addressing the rejections, Applicants would like to state that based on the Examiner’s comments in paragraph 3 of the Office Action, the rejection of the claims appears to be attributable to a fundamental misunderstanding by the Examiner of both the claimed invention and the Battistella reference. In this response, Applicants will provide clarifying comments that will highlight the misunderstanding.

Claims 1-11 stand rejected as failing to comply with the written description requirement under the first paragraph of 35 USC §112. The rejection is respectfully traversed.

The Examiner’s stated basis for the rejection is that the term “load equivalent weight” is not found in the application. The Examiner further states, “Furthermore, the applicant appears to be asserting that the ‘load equivalent weight’ is a weight measurement when, in fact, it is a dimensionless unit.”

The Examiner is correct on the first issue in that the term “load equivalent weight” is not found in the application. Only the term “load equivalent” is found. Therefore, the claims have been amended to remove the term weight, which, in and of itself, overcomes the rejection.

However, further comment is warranted regarding the Examiner’s second issue as it is indicative of a fundamental misunderstanding of Applicants disclosure. The load equivalent as disclosed in the application expressly a number that is indicative of the weight of the load. A simple application of the rules of dimensional analysis makes this clear.

In the application, the load equivalent is defined by the formula:

$$\text{Load Equivalent} = A_w * 1/K,$$

and K is expressly identified in the application as having the dimensions Liters/Kg.

The term A_w (Absorbed Water) is defined by the formula:

$$\text{Absorbed Water } (A_w) = \text{Filled Water} - \text{Free Water},$$

and which is identified in the application as having the dimensions of Liters.

A simple application of dimensional analysis by substituting in the units for A_w and K into the formula for Load Equivalent results in:

$$\text{Load Equivalent} = L * (1/[L/Kg]),$$

which can be simplified to $(L*Kg)/L$, where the Liters cancel leaving only the units of Kg.

Therefore, the Examiner's statement that the term Load Equivalent is dimensionless is incorrect. Load Equivalent has the dimension of Kg as defined in the application. This shows a fundamental misunderstanding by the Examiner of the application.

Furthermore, Kg is a well known abbreviation for Kilograms, which is a well known measure of mass, which, when multiplied by the well known gravitational constant yields weight. In the SI system, the measure of weight is technically a Newton, which is the product of weight (Kg) and the gravitation constant (m/s^2). However, it is well known to use Kilograms as a shorthand reference to the corresponding weight, even though it is technically a measure of mass, as it is more understandable to scientific and non-scientific people, who may not know what a Newton is, especially when the only difference is the multiplication of the well known gravitational constant. Thus, Load Equivalent is a weight measurement, contrary to the Examiner's position.

The rejection to the claims on the basis of the term Load Equivalent Weight should be withdrawn as the term weight is removed from the claims and, even if it had not been, the patent application fully supports the term weight. Withdrawal of the rejection is requested.

Claims 1, 4, and 7 stand rejected as being anticipated by Battistella. The rejection is respectfully traversed.

Before specifically addressing the claims, a comparison between Applicants' invention and Battistella will greatly aid in illustrating that the two are so different that they are

fundamentally different. Applicants' invention is directed to estimating a load weight in order to set a wash water level. Battistella is directed to determining the particular type of textiles, or mix thereof, forming the washload (Col. 1, lines 7-12). These different goals lead to fundamentally different inventions.

Applicants' invention estimates the load weight based on an estimation of the specific absorption of the clothes load. The specific absorption is estimated by the water absorbed by the clothes and the free water in the tub. Applicants' invention never actually measures the load weight or the specific absorption.

Battistella uses an actual measurement of the load weight that is provided to the machine (Col. 3, lines 20-24 and 30-35). It is notable that the providing of the actual load weight is expressly stated as not a part of Battistella's invention. With the provided load weight, Battistella fills the washer with a predetermined volume of water for the given load weight. (Col. 2, lines 48-60 and Col. 3, lines 30-36). Battistella then goes through multiple steps, such as agitation and recirculation, to ensure that the clothes are completely soaked—they have absorbed all that they can absorb. (Col. 3, lines 36-45). The amount of residual water (which is Applicants Free Water) is measured. (Col. 2, lines 54-56). "Finally, based on the weight of the clothes loaded into the drum and the amount of water absorbed, the average soaking characteristic of the washload is calculated and, hence, the mix of textile types in the washload is determined." (Col. 2, lines 56-60).

In comparison, both Applicants' invention and Battistella determine an absorption value for the clothes load. Applicants estimate their absorption value SA based on the absorbed water and the free water. Battistella calculates their absorption value based on a direct measurement of the load weight and the measured free water.

Applicants' invention and Battistella use their differently determined absorption values for different purposes. Applicants use the absorption value to estimate a load equivalent, which is an estimation of the load weight. Battistella uses its absorption value to determine the type of clothing (cotton, synthetics, etc.) comprising the clothes. Battistella does not need to and has no

disclosure of using the absorption value to determine a load weight or estimated load weight as the load weight is provided or directly measure in Battistella.

With that background, we can now move on to the specific claim rejections. The rejection of claims 1, 4, and 7 as being anticipated by Battistella must fail because Battistella does not disclose each and every element of the claim.

For claim 1, Battistella does not disclose either estimating a specific absorption of the load based on the water absorbed and on the free water, nor does Battistella disclose calculating a load equivalent based on the estimated specific absorption. Instead, Battistella calculates an absorption value based on the actual values of the load weight and the free water. Battistella also never calculates a load equivalent, or a load weight for that matter, as a function of the absorption value as Battistella directly measures or is given the actual load weight. As Battistella is missing at least these two elements of claim 1, it cannot anticipate claim 1.

Claim 4 depends from claim 1 and is not anticipated for the same reasons as claim 1.

While claim 7 is not dependent from claim 1, it does, like claim 1, calls for the estimation of a specific absorption that is used to calculate a load equivalent. Neither of these limitations is found in Battistella. Therefore, claim 7 is also not anticipated.

Claims 2 and 8 stand rejected as being obvious in view of Battistella in view of Cracraft. The rejection is respectfully traversed.

Cracraft is cited in the office action for disclosing "...calculating the derivative to determine fill characteristics such as water absorbency and displacement (col. 9 lines 25-35)." It should be made clear that Cracraft's use of derivatives is in the context of an alternative embodiment that is used to determine the type of fabric comprising the load. (See generally, Col. 9, lines 11-25). Thus, any combination of Battistella and Cracraft would necessarily limit the use of the derivatives to support Battistella's stated goal of determining the fabric types comprising the load.

Also, Cracraft, like Battistella, does not disclose nor contain any disclosure to estimating a specific absorption based on the absorbed water and the free water, and calculating a load equivalent based on the estimated specific absorption. Thus, any combination of Cracraft and

Battistella would not teach or suggest these two claim limitations found in claims 1 and 7. As the combination is completely missing two claim limitations, both expressly and functionally, claims 1 and 7 are not obvious in view of the combination. The combination would necessarily use the provided or directly measured actual load weight to directly calculate the actual absorption as taught by Battistella, which is not expressly or functionally that same as the claimed estimating of the specific absorption to calculate a load equivalent.

In the washer art, the ability to calculate a load weight has historically been done by relatively expensive sensors for the motor. The motor data, such as torque, is used to determine the load weight. The ability to estimate the load weight without the use of such sensors is very significant. The other alternative to directly sensing load weight has been for the user to input the weight, which, unfortunately is not very reliable because users often enter the wrong data.

It may be worth noting that the Examiner appears to have taken the position that term load equivalent is not in any way related to the weight of the load. However, as stated above with respect to the §112 rejection, the load equivalent is an estimation of the load weight. Therefore, the given that the combination does not disclose the estimating of a specific absorption based on the water absorbed and the free water to calculate a load equivalent, then claims 1 and 7 are not obvious in view of the combination. Claims 2 and 8 are likewise not obvious as they depend from claims 1 and 7, respectively.

Claims 2 and 8 are independently patentable over the alleged combination because they call for predicting a load equivalent based on a predicted future water level, which is a function of the difference of water level over predetermined time intervals. The combination, while using derivatives of the water fill, uses this information to determine the type of fabric comprising the load. The combination does not use the derivatives to predict future water levels, which are then used to predict a load equivalent. While the mathematical tool (differences and derivatives) used in claims 2 and 8 and the combination might be similar at an abstract level, they are used to determine fundamentally different parameters of the washing system: fabric mix as compared to load weight. The use of the same tool to create a different result, does not make one result obvious in view of the other.

Claims 2 and 8 are patentable over the alleged combination. Withdrawal of the rejection is respectfully requested.

Claims 3, 9-11 stand rejected over the alleged combination of Battistella in view of Wickremasinghe. The rejection is respectfully traversed.

The addition to of Wickremasinghe to Battistella does not remedy the fact that Battistella does not disclose nor contain any disclosure to estimating a specific absorption based on the absorbed water and the free water, and calculating a load equivalent based on the estimated specific absorption. Thus, the resulting combination would be missing these two limitations expressly found in claims 1 and 7. Therefore, claims 1 and 7 are not obvious over the alleged combination. Claims 3 and 9-11 depend directly or indirectly from either claim 1 or 7 and are not obvious over the combination for the same reasons as claims 1 and 7.

Claims 5 and 6 stand rejected as being obvious over the alleged combination of Battistella in view of Civanelli. The rejection is respectfully traversed.

The addition to of Civanelli to Battistella does not remedy the fact that Battistella does not disclose nor contain any disclosure to estimating a specific absorption based on the absorbed water and the free water, and calculating a load equivalent based on the estimated specific absorption. Thus, the resulting combination would be missing these two limitations expressly found in claims 1 and 7. Therefore, claims 1 and 7 are not obvious over the alleged combination. Claims 5 and 6 depend directly or indirectly from either claim 1 or 7 and are not obvious over the combination for the same reasons as claims 1 and 7.

Respectfully submitted,

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